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(84) Designated contracting states:	(74) Representative:

(54) VIA PLATING METHOD, PRODUCTION OF VIA PLATING STRUCTURE AND MULTILAYER INTERCONNECTION STRUCTURE

(57) Abstract:

PROBLEM TO BE SOLVED: To reduce formation of a void when a via is filled by providing an electrically conductive interconnection in a via through electroplating in a bath containing an aliphatic amine alkoxylate surfactant.

SOLUTION: An undercut structural part can be obtained by etching an RIE mask 3 and an underlying polymer layer 2 sequentially. A barrier layer 5 is deposited on the structural part by means of CVD or electroless plating. In order to deposit a seed layer 6, Cu is deposited on the layer 5 by sputtering. A continuous structure 6 of the barrier layer 5 and the seed layer is formed by

combining the metal sputtering deposition and the metal sputtering etching well. The undercut part is filled by electrodeposition through electroplating bath containing a smoothing additive, and an alkanol ACN akiphatic amine alkoxylate based surfactant in an aqueous medium.